

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF THE CLAIMS:

1-12. (Canceled).

13. (Currently Amended) A fuel-injection system for direct injection of fuel into a combustion chamber through a combustion-chamber top located opposite from a piston, comprising:

a fuel injector having a plurality of spray-discharge orifices discharging a corresponding plurality of fuel jets, wherein the plurality of fuel jets form a spray cloud in the combustion chamber;

wherein a first opening angle of the spray cloud along a first cross-sectional plane bisecting the longitudinal axis of the fuel injector is greater than a second opening angle of the spray cloud along a second cross-sectional plane bisecting the longitudinal axis of the fuel injector, the second cross-sectional plane extending perpendicular to the first cross-sectional plane, and

wherein the first opening angle of the spray cloud along the first cross-sectional plane bisecting the longitudinal axis of the fuel injector and the second opening angle of the spray cloud along the second cross-sectional plane bisecting the longitudinal axis of the fuel injector are symmetrical about the longitudinal axis of the fuel injector.

14. (Previously Presented) The fuel-injection system as recited in Claim 13, wherein the spray cloud is formed in the combustion chamber with a clearance angle between the combustion-chamber top and the spray cloud, and wherein the clearance angle is uniform along the circumference of the spray cloud.

15. (Previously Presented) The fuel-injection system as recited in Claim 14, wherein the combustion-chamber top conically widens from the fuel injector along the second cross-sectional plane bisecting the longitudinal axis of the fuel injector, and wherein the combustion-chamber top widens from the fuel injector along the first cross-sectional plane bisecting the longitudinal axis of the fuel injector at a greater gradient than along the second cross-sectional plane.

16. (Previously Presented) The fuel-injection system as recited in Claim 15, wherein the plurality of fuel jets is injected in the direction of a cavity in the piston.

17. (Previously Presented) The fuel-injection system as recited in Claim 16, wherein the surface of the piston cavity has at least one projection.

18. (Previously Presented) The fuel-injection system as recited in Claim 17, wherein the at least one projection is centrally positioned in the piston cavity.

19. (Previously Presented) The fuel-injection system as recited in Claim 16, wherein the plurality of fuel jets injected into the piston cavity has substantially identical spacing with respect to the surface of the piston cavity.

20. (Previously Presented) The fuel-injection system as recited in Claim 16, wherein inner fuel jets located in the center region of the spray cloud extend into the combustion chamber to a lesser depth than outer fuel jets of the spray cloud.

21. (Previously Presented) The fuel-injection system as recited in Claim 20, wherein at least one of: a) diameters of the spray-discharge orifices corresponding to the inner fuel jets are smaller than diameters of the spray-discharge orifices corresponding to the outer fuel jets; b) diameters of the spray-discharge orifices corresponding to the inner fuel jets widen in the discharge-side region; and c) the fuel pressure applied to the spray-discharge orifices corresponding to the inner fuel jets is reduced by upstream structural units.

22. (Previously Presented) The fuel-injection system as recited in Claim 16, wherein the fuel injector is located in the center of the combustion-chamber top.

23. (Previously Presented) The fuel-injection system as recited in Claim 16, wherein the fuel injector has 20 to 40 spray-discharge orifices.

24. (Previously Presented) The fuel-injection system as recited in Claim 16, wherein the spray-discharge orifices have a spread angle of approximately 15° to 25° relative to each other.

25. (Currently Amended) The fuel-injection system as recited in Claim 13, A fuel-injection system for direct injection of fuel into a combustion chamber through a combustion-chamber top located opposite from a piston, comprising:

a fuel injector having a plurality of spray-discharge orifices discharging a corresponding plurality of fuel jets, wherein the plurality of fuel jets form a spray cloud in the combustion chamber;

wherein a first opening angle of the spray cloud along a first cross-sectional plane bisecting the longitudinal axis of the fuel injector is greater than a second opening angle of the spray cloud along a second cross-sectional plane bisecting the longitudinal axis of the fuel injector, the second cross-sectional plane extending perpendicular to the first cross-sectional plane,

wherein the spray cloud is formed in the combustion chamber with a clearance angle between the combustion-chamber top and the spray cloud, [[and]]

wherein the clearance angle is uniform along the circumference of the spray cloud, wherein the combustion-chamber top conically widens from the fuel injector along the second cross-sectional plane bisecting the longitudinal axis of the fuel injector, [[and]]

wherein the combustion-chamber top widens from the fuel injector along the first cross-sectional plane bisecting the longitudinal axis of the fuel injector at a greater gradient than along the second cross-sectional plane,

wherein the plurality of fuel jets is injected in the direction of a cavity in the piston, wherein the surface of the piston cavity has at least one projection,

wherein the at least one projection is centrally positioned in the piston cavity,

wherein the plurality of fuel jets injected into the piston cavity has substantially identical spacing with respect to the surface of the piston cavity, and

wherein inner fuel jets located in the center region of the spray cloud extend into the combustion chamber to a lesser depth than outer fuel jets of the spray cloud.

26. (Currently Amended) The fuel-injection system as recited in Claim 25, wherein diameters of the spray-discharge orifices corresponding to the inner fuel jets are smaller than

diameters of the spray-discharge orifices corresponding to the outer fuel jets ~~is reduced by upstream structural units.~~

27. (Previously Presented) The fuel-injection system as recited in Claim 25, wherein diameters of the spray-discharge orifices corresponding to the inner fuel jets widen in the discharge-side region is reduced by upstream structural units.

28. (Previously Presented) The fuel-injection system as recited in Claim 25, wherein the fuel pressure applied to the spray-discharge orifices corresponding to the inner fuel jets is reduced by upstream structural units.

29. (Previously Presented) The fuel-injection system as recited in Claim 16, wherein the fuel injector is located in the center of the combustion-chamber top, wherein the fuel injector has 20 to 40 spray-discharge orifices, and wherein the spray-discharge orifices have a spread angle of approximately 15° to 25° relative to each other.